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METHOD FOR MANUFACTURING ELASTIC NONWOVEN FABRIC

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[There are no amendments to this patent.]

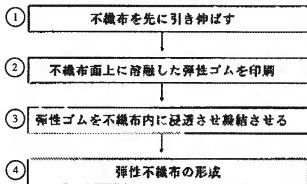
Abstract

Problem

To provide a method for manufacturing an elastic nonwoven fabric that is simple and does not generate wrinkles on the surface of a product.

Solution means

A nonwoven fabric is first stretched out, and a molten elastic rubber is printed in various shapes such as a stripe shape, cross-netted shape, or non-directional irregular shape on the nonwoven fabric surface. Said molten elastic rubber infiltrates the fibers of the nonwoven fabric, and the molten elastic rubber solidifies, so that unidirectional stretchability is given to the nonwoven fabric.



- Key: 1 A nonwoven fabric is first stretched out.
 2 A molten elastic rubber is printed on the nonwoven fabric surface.
 3 The elastic rubber infiltrates into the nonwoven fabric and solidifies.
 4 Formation of an elastic nonwoven fabric

Claims

1. A method for manufacturing an elastic nonwoven fabric, characterized by the fact that a nonwoven fabric is first stretched out; a molten elastic rubber is printed on the nonwoven fabric surface; said molten elastic rubber infiltrates into fibers of the nonwoven fabric; and the molten elastic rubber solidifies, so that unidirectional stretchability is given to the nonwoven fabric.

2. The method for manufacturing an elastic nonwoven fabric of Claim 1, characterized by the fact that said elastic rubber can be printed in various shapes and directions on the nonwoven fabric.

Detailed explanation of the invention

[0001]

Technical field of the invention

The present invention pertains to a method for manufacturing a kind of elastic nonwoven fabric. In particular, the present invention pertains to a method that can simply manufacture a nonwoven fabric without generating wrinkles.

[0002]

Prior art

Nonwoven fabrics can be divided into inelastic nonwoven fabrics and elastic nonwoven fabrics. As a method for manufacturing an elastic nonwoven fabric, there is a method that sandwiches stretched elastic yarns into fibers in a nonwoven fabric knitting process or sandwiches a rubber film or rubber net manufactured by heating and melting into a nonwoven fabric of two layers, and thereby flexible elasticity has been given to the manufactured nonwoven fabric. However, in nonwoven fabrics manufactured by the above-mentioned two methods, wrinkles are formed on the fabric surface by a recovery contract action of the elastic yarns or rubber film (net) and these have a large influence on the value of the product.

[0003]

As another method for manufacturing elastic nonwoven fabric, in Taiwan Patent Application No. 78110066, a random copolymer is manufactured, in which a polymer platform containing at least two ethylene aromatic compounds and a polymer platform having at least two conjugated diene compounds are included, at least one of the polymer platforms is arranged at the terminal of the polymer chain, the total average molecular weight is in the range of 30,000-65,000, and the content of the diene aromatic substance is in the range of 15-40 wt%, and an oxidized random copolymer is obtained by oxidizing said random polymer and is spun. The fiber groups obtained by the spinning process are integrated on a collection surface, so that a fiber net is formed.

[0004]

Also, as another method for manufacturing elastic nonwoven fabric, in Taiwanese Patent Application No. 78110066, the following manufacturing steps A-D are included. In other words, (a) at least one thermoplastic artificial short fiber mesh is formed and set on a support surface moving in an oblique pattern in the machine direction; (b) a low-density adhesive pattern is selected and lightly adhered with the formed and set mesh, so that a surface layer component is formed; (c) at least monolayer mesh containing artificial short fibers is placed at the inner

surface of the surface layer component formed by lightly adhering, and said surface layer component is generally arranged to exhibit a direction horizontal with respect to the machine direction; and (d) the adhered body in which the actual adhesion density is higher than said surface layer component is adhered to the artificial short fibers placed horizontally, so that a bottom layer component is formed, thereby obtaining a nonwoven fabric.

[0005]

In the methods for manufacturing the above-mentioned latter two elastic nonwoven fabrics, the manufacturing processes are relatively complicated, and the manufacturing cost is relatively high. For these reasons, a method for manufacturing an elastic nonwoven fabric, in which the manufacture is relatively easy and wrinkles are not generated on the fabric surface of the product, has been in demand.

[0006]

Problems to be solved by the invention

Therefore, the present invention is a method for manufacturing a nonwoven fabric with flexible elasticity that processes a nonwoven fabric, stretches it out, and prints an elastic rubber on the fabric surface, and its objective is to provide a method for manufacturing an elastic nonwoven fabric that is simple and does not generate wrinkles on the fabric surface of a product.

[0007]

Means to solve the problems

The invention of Claim 1 is a method for manufacturing an elastic nonwoven fabric characterized by the fact that a nonwoven fabric is first stretched out, a molten elastic rubber is printed on the nonwoven fabric surface, said molten elastic rubber infiltrates fibers of the nonwoven fabric, and the molten elastic rubber solidifies, so that unidirectional stretchability is given to the nonwoven fabric.

[0008]

The invention of Claim 2 is the method for manufacturing an elastic nonwoven fabric of Claim 1 characterized by the fact that said elastic rubber can be printed in various shapes and directions on the nonwoven fabric.

[0009]

Embodiment of the invention

The present invention provides a method for manufacturing an elastic nonwoven fabric. In this method, first, a nonwoven fabric is stretched out, and a molten elastic rubber is printed in various shapes such as a stripe shape, cross netted shape, or non-directional irregular shape on the nonwoven fabric surface. Said molten elastic rubber infiltrates into fibers of the nonwoven fabric, and the molten elastic rubber solidifies, so that unidirectional stretchability is given to the nonwoven fabric.

[0010]

Application example

Figure 1 is a flow chart showing the method for manufacturing the elastic nonwoven fabric provided by the present invention. At its first step, a nonwoven fabric 1 (see Figure 2) is first stretched by a device (see Figure 3), and at the second step, an elastic rubber 2 of various shapes is printed on the surface of the stretched nonwoven fabric 1 by a general printing method such as screen printing, roller printing, or other printing methods. Said elastic rubber 2 is made of polyurethane, synthetic rubber, or other materials and is set in a molten state by a heating or a chemical addition method. Said elastic rubber 2 is printed in a cross-netted shape (Figure 4), a stripe shape (Figure 5), or a non-directional irregular shape (Figure 6) on the nonwoven fabric 1, and said molten elastic rubber 2 infiltrates fibers of the nonwoven fabric 1. After the molten elastic rubber 2 solidifies, a unidirectional elastic flexibility is provided to the nonwoven fabric 1 in the direction perpendicular to the original stretching direction, and elastic flexibility is not provided to the original stretching direction.

[0011]

Effect of the invention

The present invention provides a method for manufacturing a nonwoven fabric with flexible elasticity that processes a nonwoven fabric, stretches it out, and prints an elastic rubber on the fabric surface. In this method for manufacturing an elastic nonwoven fabric, the manufacture can be simply carried out, and wrinkles are not generated on the fabric surface. Thus, the method of the present invention has sufficient industrial utilization value.

Brief description of the figures

Figure 1 is a flow chart showing the manufacturing method of the present invention.

Figure 2 is a plan view showing a general nonwoven fabric that is not yet stretched.

Figure 3 is a plan view showing stretching of the nonwoven fabric and the stretching direction.

Figure 4 is a plan view showing an elastic rubber printed in a net shape on the surface of the stretched nonwoven fabric.

Figure 5 is a plan view showing an elastic rubber printed in a stripe shape on the surface of the stretched nonwoven fabric.

Figure 6 is a plan view showing an elastic rubber printed in an irregular shape on the surface of the stretched nonwoven fabric.

Explanation of symbols:

- 1 Nonwoven fabric
- 2 Elastic rubber

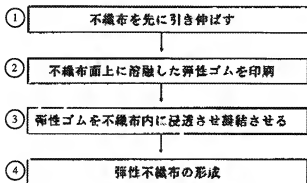


Figure 1

- Key:
- 1 A nonwoven fabric is first stretched out.
 - 2 A molten elastic rubber is printed on the nonwoven fabric surface.
 - 3 The elastic rubber infiltrates into the nonwoven fabric and solidifies.
 - 4 Formation of an elastic nonwoven fabric

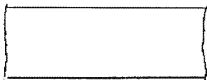


Figure 2

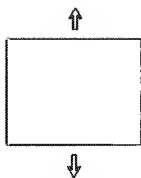


Figure 3

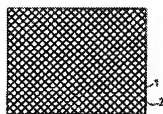


Figure 4



Figure 5



Figure 6